

Name: _____

Date: _____

Exam: Function Reflections (Practice version 2)

1. Let function f be defined by the polynomial below:

$$f(x) = -8x^4 + 7x^3 - 9x^2 - 2x + 6$$

Draw lines that match each function reflection with its polynomial:

Reflections

Polynomials

$-f(-x)$ •

• $8x^4 - 7x^3 + 9x^2 + 2x - 6$

$f(-x)$ •

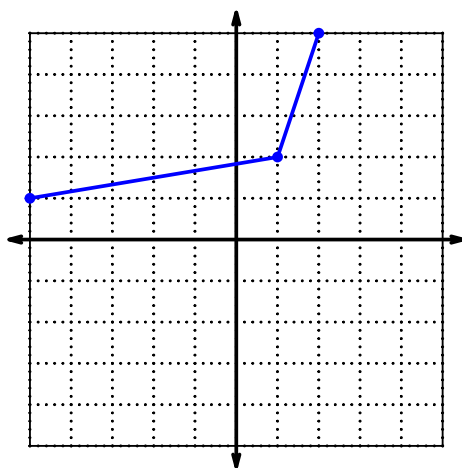
• $8x^4 + 7x^3 + 9x^2 - 2x - 6$

$-f(x)$ •

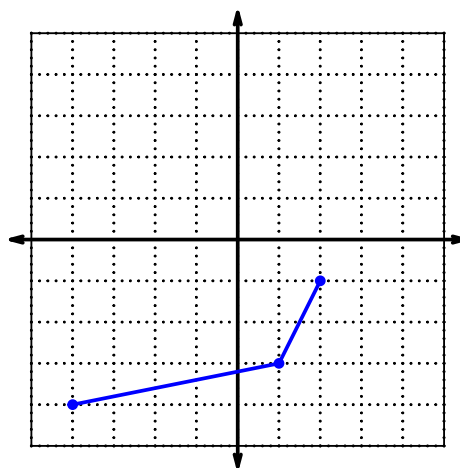
• $-8x^4 - 7x^3 - 9x^2 + 2x + 6$

2. In each xy plane shown below, a function is graphed with blue. Draw the indicated reflections (as a second curve, indicated in legend) with black (or with whatever you have). The x axis is horizontal and the y axis is vertical (as typical), and the scale is equal on both axes.

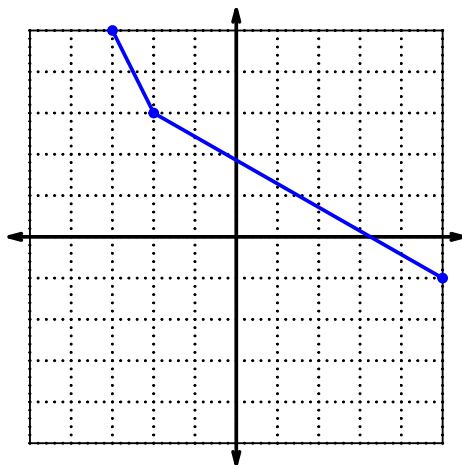
• $y = g(x)$
• $y = g(-x)$



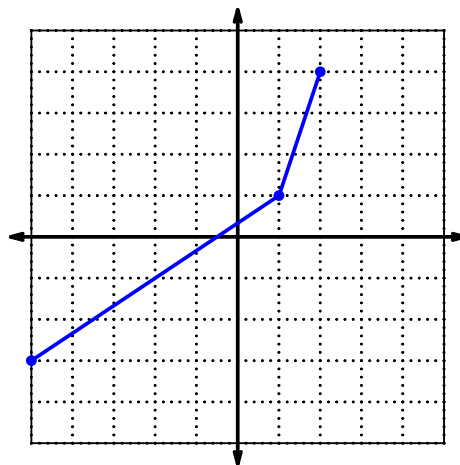
• $y = h(x)$
• $y = -h(x)$



• $y = m(x)$
• $y = m^{-1}(x)$



• $y = p(x)$
• $y = -p(-x)$



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For all questions on this page, the functions f , g , and h are defined by the table below.

x	$f(x)$	$g(x)$	$h(x)$
1	2	5	7
2	7	8	3
3	4	6	8
4	9	2	2
5	3	7	1
6	5	9	9
7	6	3	4
8	1	4	6
9	8	1	5

3. Evaluate $f(5)$.

4. Evaluate $g^{-1}(4)$.

5. By filling more rows of the table, it is possible to make function f **even**. If that were done, what would be the value of $f(-1)$?

6. By filling more rows of the table, it is possible to make function h **odd**. If that were done, what would be the value of $h(-6)$?

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7. A function, f , is **even** if $f(x) = f(-x)$ for all x in the domain. A function, g , is **odd** if $g(x) = -g(-x)$ for all x in the domain.

Let polynomial p be defined with the following equation:

$$p(x) = x^2 - 1$$

- a. Express $p(-x)$ as a polynomial in standard form.

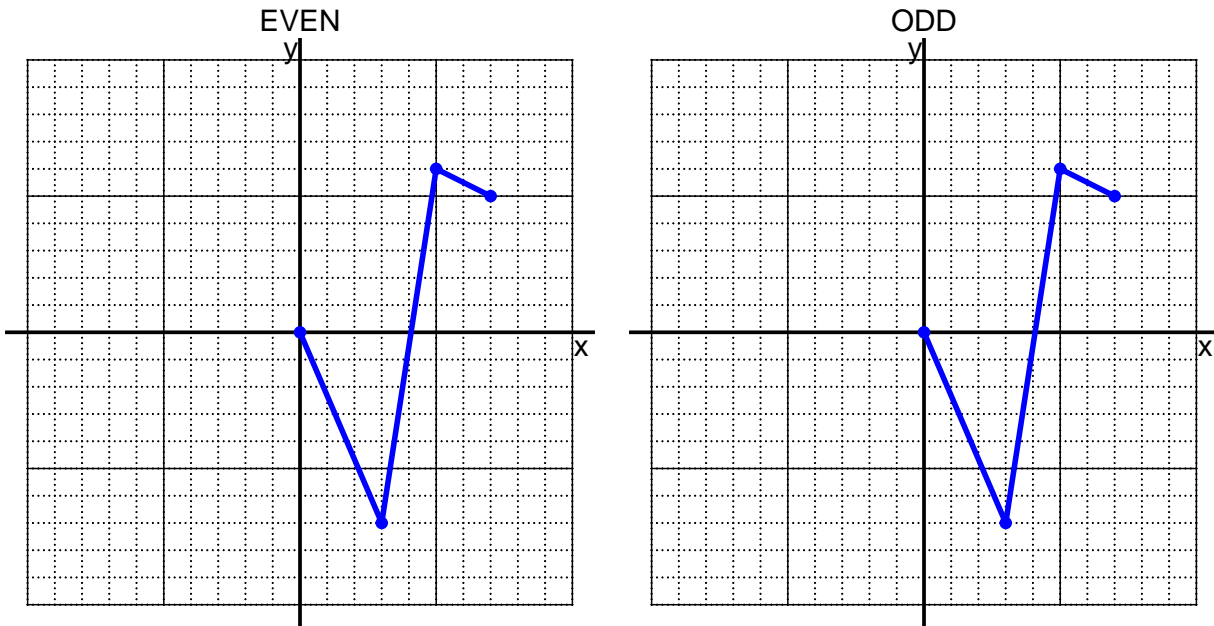
- b. Express $-p(-x)$ as a polynomial in standard form.

- c. Is polynomial p even, odd, or neither?

- d. Explain how you know the answer to part c.

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8. I have drawn half of a function. Draw the other half to make it even or odd.



9. Let function f be defined with the equation below.

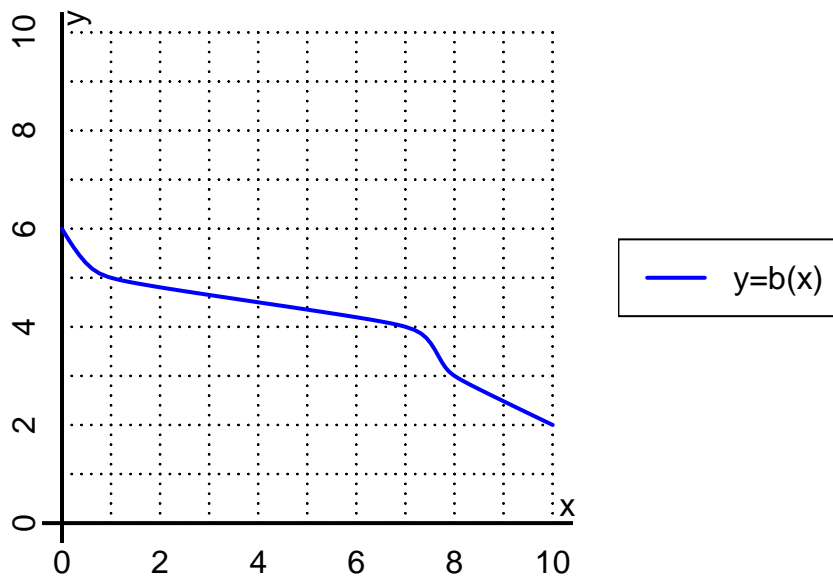
$$f(x) = \frac{x+5}{2}$$

- a. Evaluate $f(41)$.

- b. Evaluate $f^{-1}(24)$.

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10. The function b is represented by the curve $y = b(x)$ graphed below.



a. Evaluate $b(8)$.

b. Evaluate $b^{-1}(5)$.

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11. Function f is defined by the table below.

a. Complete the columns for $-f(x)$ and $f(-x)$ and $-f(-x)$.

x	$f(x)$	$-f(x)$	$f(-x)$	$-f(-x)$
-2	-5			
-1	6			
0	0			
1	-6			
2	5			

b. Is function f even, odd, or neither?

c. How do you know the answer to part b?